

CLAIMS

I claim:

1. A catheter comprising:
a shaft comprising a body with a proximal portion and a distal portion, the body defining an opening from the proximal portion to the distal portion, the distal portion having an exterior dimension suitable for insertion into a body of a subject as a procedural instrument, the distal portion having an end that is beveled in a first direction across an end opening, such that a length of the shaft to a first point on the end is a first length and a length of the shaft to a second point on the end is a second length longer than the first length, a portion of the shaft including the second point defining a tip, wherein the tip comprises a material that has sufficient rigidity to penetrate an endometrial lining of a subject and sufficient flexibility to resist penetration of a uterine muscle of a subject.
2. The catheter of claim 1, wherein the beveled end defines an angle of 0 to 60 degrees between the end of the distal portion and the open front end.
3. The catheter of claim 2, wherein the beveled end defines an angle of 10 to 15 degrees between the end of the distal portion and the open front end.
4. The catheter of claim 1, further comprising a tapered region approximately 1.5 centimeters from the tip and the outside diameter of the shaft in the tapered region.
5. The catheter of claim 1, wherein the shaft defines a first axis of symmetry through the opening therethrough and a portion of the distal

portion defines a second different axis of symmetry through the opening therethrough.

6. The catheter of claim 5, wherein the second axis of symmetry differs by a deflection angle of 0 to 60 degrees from the first axis of symmetry.

7. The catheter of claim 5, wherein the second axis of symmetry differs by a deflection angle of 10 to 15 degrees from the first axis of symmetry.

8. The catheter of claim 6, wherein the deflection angle is in a direction opposite the first direction beveled end of the distal portion.

9. The catheter of claim 1, wherein an inner diameter of the tip is at least approximately 10 micrometers in size.

10. The catheter of claim 9, wherein the inner diameter of the tip is between approximately 400 and 500 micrometers.

11. An apparatus comprising:

a catheter body with a proximal portion and a distal portion, the distal portion having a tip and an outside diameter suitable for insertion into a body of a subject as a procedural instrument, wherein the tip comprises a material that has sufficient rigidity to penetrate an endometrial lining of a subject and sufficient flexibility to resist penetration of a uterine muscle of a subject;

the distal portion having an end beveled across an end opening; and
a portion of the distal portion having a fixed axis of symmetry different than an axis of symmetry of the proximal portion.

12. The apparatus of claim 11, wherein the fixed axis of symmetry differs by a deflection angle of 0 to 60 degrees from the axis of symmetry of the proximal portion.

13. The apparatus of claim 11, wherein the fixed axis of symmetry differs by a deflection angle of 10 to 15 degrees from the axis of symmetry of the proximal portion.

14. The apparatus of claim 11, wherein the beveled end defines an angle of 0 to 60 degrees between the end of the distal portion and the open front end.

15. The apparatus of claim 14, wherein the beveled end defines an angle of 10 to 15 degrees between the end of the distal portion and the open front end.

16. The apparatus of claim 11, further comprising a tapered region approximately 1.5 centimeters from the tip and the outside diameter of the shaft in the tapered region is less than the outside the diameter of the shaft at a portion outside of the tapered region.

17. The apparatus of claim 11, wherein an inner diameter of the tip is at least approximately 10 micrometers in size.

18. The apparatus of claim 17, wherein the inner diameter of the tip is between approximately 400 and 500 micrometers.

19. An apparatus comprising:
a catheter body with a proximal portion and a distal portion, the distal portion having an outside diameter suitable for insertion into a body of a subject as a procedural instrument wherein a portion of the catheter body comprises a material that has sufficient rigidity to penetrate a first

tissue of a subject and sufficient flexibility to resist penetration of a second tissue of a subject.

20. The apparatus of claim 19, further comprising:
at least one of a cavity and a lumen defined by the catheter body to deliver a substance to an internal portion of the body of the subject.
21. The apparatus of claim 20, wherein the substance comprises:
an embryo between approximately 1 and 7 days old.
22. The apparatus of claim 21, wherein the substance further comprises:
a culture medium.
23. The apparatus of claim 19, further comprising:
an extraction device located at the distal portion of the catheter body,
the extraction device to remove material from an internal portion of the body of the subject.
24. The apparatus of claim 23, wherein the extraction device comprises:
biopsy forceps.
25. The apparatus of claim 23, further comprising:
a viewing device to enable viewing of at least one of the distal portion of the catheter body and the extraction device.